

1/2 CCS UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--AMMONIUM PERRHENATE AMMONIUM NITRATE WATER SYSTEM AT 0, 25, AND
40DEGREES -L-
AUTHOR--(G2)--BARYSHNIKOVA, S.M., BIBIKOVA, V.I.

B

COUNTRY OF INFO--USSR

SOURCE--ZF. NEORG. KHM. 1970, 15(3), 774-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NITRATE, AMMONIUM COMPOUND, WATER, RHENIUM COMPOUND,
SOLUBILITY, DISTRIBUTION COEFFICIENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0454

STEP NO--UR/0078/70/015/003/0774/0777

CIRC ACCESSION NO--APO126206

UNCLASSIFIED

2/2 0C9

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--APO126206

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY. OF NH SUB4 REO SUB4-NH SUB4 NO SUB3-H SUB2 O SYSTEM WAS DEDD. AT 0, 25, AND 40DEGREES AND THE DATA ARE TABULATED. THIS IS A SIMPLE EUTONIC SYSTEM WITH EUTONIC POINTS AT (TEMP., WT. PERCENT NH SUB4 REO SUB4, WT. PERCENT NH SUB4 NO SUB3); 20DEGREES, 0.55, 54.1; 25DEGREES, 1.50, 66.4; AND 40DEGREES, 2.00, 75.4. DISTRIBUTION COEFFS. (BETWEEN LIQ. AND SOLID PHASES) AND SALTING OUT COEFFS. OF NH SUB4 REO SUB4 ARE GIVEN.

UNCLASSIFIED

1/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--GEOCHRONOLOGY OF PRECAMBRIAN FORMATIONS IN THE URALS -U-

AUTHOR--(04)-TUGARINOV, A.I., BIBIKOVA, YE.V., KRASNOBAYEV, A.A., MAKAROV,
V.A.
COUNTRY OF INFO--USSR

B

SOURCE--GEOKHIMIYA 1970, (4), 501-9

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOCHRONOLOGY, PRECAMBRIAN TIME, ABSOLUTE AGE, MAGMA,
METAMORPHIC ROCK, ZIRCON, EARTH CRUST AGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REFL/FRAME--1997/0136

STEP NO--UR/0007/70/000/004/0501 .509

CIRC ACCESSION NO--AP0119132
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119132

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABS. AGES OF VARIOUS PRECAMBRIAN MAGNETIC AND METAMORPHIC ROCKS WERE DETD. FROM ZIRCONS BY THE ISOTOPIC METHOD. THE AGE DETNS. INDICATED THE PRESENCE OF 2 STAGES OF EFFUSIVE ROCK FORMATION IN THE BASHKIR ANTICLINORIUM (SOUTHERN URALS). THE ANCIENT TARATASHSK INTRUSIONS, WHICH TERMINATED THE LOWER PROTEROZOIC CYCLE AND WERE ACCCOMPANIED BY INTENSE REGIONAL METAMORPHISM, HAVE ABS. AGE OF 2000-200 MILLION YR. THE BERDYANSHSK PLUTON (1430 MILLION YR OLD) AND GUBENSK AND RYABINOVSK INTRUSIONS (1350 MILLION YR) BELONG TO SUCCESSIVE INTRUSIVE PHASE. THIS PHASE COINCIDED WITH LARGE INTERRUPTION IN SEDIMENT ACCUMULATION AND WAS DENOTED BY DISCONFORMITY BETWEEN THE BURZYANSK AND YURMATINSK SERIES INDICATING AN INTENSE DEVELOPMENT IN URALS OF THE STRATA HAVING A VERY LIMITED DISTRIBUTION IN THE EARTH. FACILITY: V. I. VERNADSKII INST. GEOCHEM. ANAL. CHEM., MOSCOW, USSR.

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126514

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF THE DESIGNS AND OPERATION OF TWO DEVICES FOR CONTROLLING REGIONAL HYPOTONIA WITH OR WITHOUT BLOOD CIRCULATION CENTRALIZATION, IN EMERGENCY CASES. THE DEVICES CONSIST OF AN INFLATABLE BALLOON, AN EXTRACORPOREAL SHUNT, AN ELECTROMAGNETIC VALVE, A MONOMETER AND A CIRCUIT STOPPING THE BLOOD FLOW IN THE ABDOMINAL SECTION OF THE AORTA AND ARRESTING HEMORRHAGES IN CAUDAL SECTIONS OF THE TRUNK. THE DEVICES WERE DESIGNED TO FACILITATE ABDOMINAL SURGERIES AND TO CONTROL METRORRHAGIA. FACILITY: TBILISSKII GOSUDARSTVENNYI INSTITUT USOVERSHENSTVGVANIIA VRACHEI, TIFLIS, GEORGIAN SSR.

UNCLASSIFIED

USSR

Vector Studies

UDC 576.851.49+576.851.45/.095.33

BIBIKOVA, V. A., KHRUSTSELEVSKAYA, N. M., and ALEKSELEV, A. N., Central-Asian Scientific Research Antiplague Institute, Alma-Ata, and Order of the Labor Red Banner Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, Ministry of Health USSR, Moscow

"Infection of a Transmitter With Several Pathogens. The Fate of Salmonella and Pasteurella pestis in Fleas"
Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 42, No 1,
Jan/Feb 73, pp 69-73

Abstract: Salmonellae are known to be present in fleas at foci of plague. In experiments carried out on fleas of gerbils and rats, the effects of salmonellae and *P. pestis* on each other upon mixed infection with them of the fleas were studied. *Salmonella typhimurium* and *S. enteritidis* were used in the experiments. On simultaneous infection of the fleas with salmonellae and *P. pestis*, the rate of survival of the salmonellae during the first hours was higher than that of *P. pestis*. Subsequently the salmonellae perished at a higher rate than *P. pestis* and towards the 35th day only *P. pestis* remained. Initial infection of the fleas with *P. pestis* followed by infection with salmonellae increased the rate at which the latter perished. This was due to an increase in the unspecific resistance of the organism manifested in a bactericidal effect. The unspecific

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BIBIKOVA, V. A., et al., Meditsinskaya Parazitologiya i Parazitarnyye
Bolezni, Vol 42, No 1, Jan/Feb 73, pp 69-73

resistance of *P. pestis* was also increased by prior infection with salmonellae, but the effect was much less pronounced. Presence or absence of salmonellae did not affect the rate at which *P. pestis* finally multiplied. Simultaneous infection with salmonellae and *P. pestis* did not interfere with the formation of a proventriculus block and consequently with the mechanism by which fleas transmit plague. At the same time, conditions favoring transmission of salmonellae to warm-blooded animals were created. This was demonstrated in experiments on mice, which were infected with both salmonellosis and plague upon being bitten by fleas that carried the causative factors of both diseases. As had already been observed by other authors, salmonellae had a pathogenic effect on the fleas.

2/2

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Vector Studies

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BIBIKOVA, V. A., Doctor of Biological Sciences, Alma Ata
"Fleas, Transmitters of Mixed Infections"

Moscow, Priroda, No 10, 1971, p 101

Translation: It is common knowledge that under natural conditions plague is transmitted by fleas. On reaching the digestive tract of the vectors, the plague microbe reproduces and blocks the stomach. This results in infection the next time the fleas suck blood. This mechanism of transmission of infection (or the "block" phenomenon) is peculiar to plague alone.

The Central Asian Scientific Research Antiplague Institute (Alma-Ata) performed interesting experiments involving infection of the rat fleas *Xenopsylla cheopsis* with mixed populations of plague and pseudotuberculosis microbes.* It turned out that these microorganisms behave differently in the digestive tract of insects. Unlike *P. pestis*, the agents of pseudotuberculosis died, but before the "plague" block was formed, some of the pseudotuberculosis

*Problemy osobo opasnykh infektsiy (Problems of Especially Dangerous Infections), Saratov, 1971; Zhurnal mikrobiol., epidemiol. i immunolog. (Journal of Microbiology, Epidemiology and Immunology), 1967, No 5, pp 138-139
1/2

USSR

BIBIKOVA, V. A., Priroda, No 10, 1971, p 101

cells remained so that the specific plague mechanism was used to transmit the other infection.

Similar results were obtained in experiments with plague and salmonellosis, plague and erysipelas.* Both microbes got along peacefully with one another and the fleas infected laboratory animals with two diseases at the same time.

The results of these experiments are particularly important for the study of natural foci of plague where there are other pathogens. In places where animals suffer from bacteremia, however brief, and parasitic contacts between warm-blooded animals are mediated by fleas, the above-described phenomenon becomes epizootiologically significant. It warrants the attention of investigators.

*Materialy VII nauchnoy konferentsii Sredneaziatskogo protivochumnogo instituta (Proceedings of the 7th Scientific Conference of the Central Asian Scientific Research Antiplague Institute), Alma-Ata, 1971.
2/2

Vector Studies

USSR

UDC 576.851.45.095.38:576.895.775].095.18:615.285.7

ALEKSEYEV, A. N., ~~BIRIKOVA~~ V. A., TATARINOVA, S. G., and KHRUSTSELEVSKAYA, N. M., All Union Scientific Research Institute of Disinfection and Sterilization, Ministry of Health USSR, and Central Asian Scientific Research Antiplague Institute

"Effect of the Systemic Poison Fluoroacetamide on the Viability of Infected Fleas and on the Development of the Plague Pathogen in Them"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971,
pp 571-577

Abstract: Administration of sublethal doses of the systemic organofluorine insecticide fluoroacetamide (a poison with intestinal action against rodent ectoparasites) to the great gerbil flea *Xenopsylla gerbilli minax* and the rat flea *X. cheopis* infected with a highly virulent strain of *Pasteurella pestis* quickly killed the fleas or resulted in elimination of the microorganism from the insects. Fluoroacetamide suppressed the formation of a proventriculus block in the fleas. The mechanism of action of the poison lies in its inhibiting vital functions of both the micro- and macroorganism. By inhibiting the reproduction of the pathogen in the flea intestine, fluoroacetamide is an antagonist of plague bacteria. On the other hand, by

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ALEKSEYEV, A. N., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971, pp 571-577

intensifying the injurious effect of the toxins elaborated by the microbes, it is a synergist of the latter in that it intensifies the pathogenic effect of their toxins on the vector.

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USSR

UDC 621.359.7:661.528(023.8)

BIBIKOVA, V. I., MARUNOVA, K. V., and STEPANOVA, M. A.

"Process for the Preparation of Ammonia Perrhenates"

Goc. n.-i i proekt. in-t redkometal. prom-ste (State Scientific and Design Institute for Rare Metal Industry), USSR Author's Certificate K1 [expansion unknown] C 01 g 47/00, B 01 d 13/02, No 346230, applied 8/06/70, published 22/08/73 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L321P by N. Sh.)

Translation: Ammonium perrhenates were prepared by the electrodialysis of aqueous solutions of rhenium, for example potassium perrhenate. To strengthen and simplify the process, and also to increase the purity of the final product the electrolysis was performed using an ion exchange membrane at a current density of ≥ 4 mA/cm² at a temperature of 50-70°C. For example, an aqueous solution of potassium perrhenate, prepared from the dry salt was electrolyzed in an electrolyzer using ion exchange membranes at a temperature of 62°C and a membrane surface current of 6 mA/cm² (space surface current was 2.7 a/ℓ); the anodic chamber was filled with a 1 M solution of NH₄Cl for 5 hours. Upon cooling, crystals of the final products precipitated from the onolite obtained above a yield of 172 g. of the product, containing 69.42% rhenium, was recovered. This represented a recovery of 94% of the theoretical yield.

1/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--AMMONIUM PERRHENATE AMMONIUM NITRATE WATER SYSTEM AT 0, 25, AND
40DEGREES -L-
AUTHOR--(G2)--BARYSHNIKOVA, S.M., BIBIKOVA, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHM. 1970, 15(3), 774-7

DATE PUBLISHED-----70

B

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NITRATE, AMMONIUM COMPOUND, WATER, RHENIUM COMPOUND,
SOLUBILITY, DISTRIBUTION COEFFICIENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0454

STEP NO--UR/0073/70/015/003/0774/0777

CIRC ACCESSION NO--APO126206

UNCLASSIFIED

2/2 0C9

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO—APO126206

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY. OF NH SUB4 REO SUB4-NH SUB3
NO SUB3-H SUB2 O SYSTEM WAS DED. AT 0, 25, AND 40DEGREES AND THE DATA
ARE TABULATED. THIS IS A SIMPLE EUTONIC SYSTEM WITH EUTONIC POINTS AT
(TEMP., WT. PERCENT NH SUB4 REO SUB4, WT. PERCENT NH SUB4 NO SUB3);
0DEGREES, 0.55, 54.1; 25DEGREES, 1.50, 66.4; AND 40DEGREES, 2.00, 75.4.
DISTRIBUTION COEFFS. (BETWEEN LIQ. AND SOLID PHASES) AND SALTING OUT
COEFFS. OF NH SUB4 REO SUB4 ARE GIVEN.

UNCLASSIFIED

1/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70
TITLE--GEOCHRONOLOGY OF PRECAMBRIAN FORMATIONS IN THE URALS -U-

AUTHOR-(04)-TUGARINOV, A.I., BIBIKOVA, YE.V., KRASNOBAYEV, A.A., MAKAROV,
V.A.

COUNTRY OF INFO--USSR

B

SOURCE--GEOKHIMIYA 1970, (4), 501-9

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOCHRONOLOGY, PRECAMBRIAN TIME, ABSOLUTE AGE, MAGMA,
METAMORPHIC ROCK, ZIRCON, EARTH CRUST AGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0136

STEP NO--UR/0007/70/000/004/0501 509

CIRC ACCESSION NO--AP0119132

UNCLASSIFIED

2/2 007

CIRC ACCESSION NO--AP0119132

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABS. AGES OF VARIOUS PRECAMBRIAN MAGNETIC AND METAMORPHIC ROCKS WERE DED. FROM ZIRCONS BY THE ISOTOPIC METHOD. THE AGE DETNS. INDICATED THE PRESENCE OF 2 STAGES OF EFFUSIVE ROCK FORMATION IN THE BASHKIR ANTICLINORIUM (SOUTHERN URALS). THE ANCIENT TARATASHSK INTRUSIONS, WHICH TERMINATED THE LOWER PROTEROZOIC CYCLE AND WERE ACCCOMPANIED BY INTENSE REGIONAL METAMORPHISM, HAVE ABS. AGE OF 2000-200 MILLION YR. THE BERDYANSK PLUTON (1430 MILLION YR OLD) AND GUBENSK AND RYABINOVSK INTRUSIONS (1350 MILLION YR) BELONG TO SUCCESSIVE INTRUSIVE PHASE. THIS PHASE COINCIDED WITH LARGE INTERRUPTION IN SEDIMENT ACCUMULATION AND WAS DENOTED BY DISCONFORMITY BETWEEN THE BURZYANSK AND YURMATINSK SERIES INDICATING AN INTENSE DEVELOPMENT IN URALS OF THE STRATA HAVING A VERY LIMITED DISTRIBUTION IN THE EARTH. FACILITY: V. I. VERNADSKII INST. GEOCHEM. ANAL.

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126514

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF THE DESIGNS AND OPERATION OF TWO DEVICES FOR CONTROLLING REGIONAL HYPOTONIA WITH OR WITHOUT BLOOD CIRCULATION CENTRALIZATION, IN EMERGENCY CASES. THE DEVICES CONSIST OF AN INFLATABLE BALLOON, AN EXTRACORPOREAL SHUNT, AN ELECTROMAGNETIC VALVE, A MONOMETER AND A CIRCUIT STOPPING THE BLOOD FLOW IN THE ABDOMINAL SECTION OF THE AORTA AND ARRESTING HEMORRHAGES IN CAUDAL SECTIONS OF THE TRUNK. THE DEVICES WERE DESIGNED TO FACILITATE ABDOMINAL SURGERIES AND TO CONTROL METRORRHAGIA. FACILITY: TBILISSKII GOSUDARSTVENNYI INSTITUT USOVERSHENSTVUVANIIA VRACHEI, TIFLIS, GEORGIAN SSR.

UNCLASSIFIED

Analysis and Testing

USSR

UDC 669.218-621.775

BIRINOV, S. A., DZODZIYEV, G. T., VITRYANYUK, V. K., PETRENKO, V. D.,
Uzbek Refractory and Heat-Resistant Metals Combine, Kiev Polytechnic
Institute

"Expressed Determination of the Content of Total Carbon in Titanium Carbide"
Kiev, Poroshkovaya Metallurgiya, No 6, Jun 72, pp 102-104.

Abstract: The method for determination of the quantity of total carbon in titanium carbide suggested is based on the absorption of soft gamma-radiation by the specimen being analyzed. One of the most important specific features of this method is that the mass absorption factor for soft gamma-radiation is proportional to the fifth power of the atomic number of the absorber. The sensitivity of an experimental model of the device suggested was so great that the carbon content could be determined with an error of not over 0.15%. Three to five minutes are required for analysis. The specimens analyzed are not damaged.

1/1

Simulations

USSR

UDC: None

BIBUKOV, Yu. A., DONOV, V. G., and IVASHCHENKO, V. G.

"Device for Modeling the Neuron"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 14, 1973, p 149, No 373737

Abstract: This device, which contains an integrating circuit and thyristors, has a control electrode for the first thyristor connected with the integrator, a second thyristor being joined to the anode of the first. The function of this control electrode is to expand the class of problems capable of solution.

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USSR

UDC 669.71:620.172.251.226

KOSAREV, A. I., BICH, E. N., and PARFENOV, N. V., All-Union Institute of
Light Alloys

"Strengthening and Weakening of Aluminum Alloys at 135-150°C Under Load"
Moscow, Metallovedeniye, No 3, 1973, pp 41-45

Abstract: The mechanical properties and structure of intermediate products of D20-1, D16, and VAD23 precipitation-hardening aluminum alloys after soaking at increased temperatures under stress were investigated in this work and the results compared with AK4-1 alloy properties from a previous study. The heat treatments consisted of the following for each alloy: D20-1, 2.5-mm-thick sheet -- aged at 170°C for 16 hours; D16, 2-mm-thick sheet, naturally aged and aged at 190°C for 8 hours; VAD23, sheet 1.8 mm thick, naturally aged and aged at 160°C for 12 hours; D16, extruded rod 100 mm in diameter, naturally aged and aged at 190°C for eight hours; and VAD23, extruded strip 54 mm thick, aged at 160°C for 12 hours. It was found that strengthening and weakening processes occur in these alloys at 150°, 135°, and lower temperatures under the action of tensile stresses; strengthening is caused by additional precipitation of strengthening phase particles and phase cold working, while weakening results from coalescence of the precipitated particles. With increased temperature and reduced stress the process of coalescence is accelerated in D20-1 and D-16

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USSR

- KCSAREV, A. I., et al, Metallovedeniye, No 3, 1973, pp 41-45

alloys and promotes the presence of the less thermally stable CuAl₂ phase in intermediate products and a nonuniform, partially recrystallized structure in extruded intermediate products of D16 alloy. Extruded intermediate products with a coarse-grain recrystallized structure have a greater tendency toward strengthening. The long-time strength of these intermediate products can be more stable than the long-time strength of intermediate products with a fine-grain, equiaxial structure. In the height direction, these intermediate products are strengthened less and possess a lower long-time strength than those products with the fine-grain, equiaxial structure. It is possible to judge the tendency of an alloy to strengthening and weakening from long-time strength tests by the change in long-time ductility: the greater the slope of the curves the more intensive is the strengthening. An increase in relative reduction in area during long-time strength tests characterizes intensive weakening of the alloy at the time sample necking commences. 4 figures, 1 table, 3 bibliographic references.

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USSR

UDC 669.71.472(088.8)

BELYAYEV, A. S., BICH. I. I., VIKHLYAYEV, A. A., NOSIKOV, G. M., and
FEDULOV, A. I., Novokuznetsk Aluminum Plant and Mining Institute of
Siberian Department of Academy of Sciences USSR

"Device for Disassembly of Lining of Aluminum Electrolyzers"

USSR Authors' Certificate No 290949, Cl. C 22d 3/02, C 22 d 3/12, filed
18 Nov 69, published 11 May 71 (from RZh-Metallurgiya, No 1, Jan 72,
Abstract No 1G125P)

Translation of Abstract: This device for the disassembly of the lining of aluminum electrolyzers in accordance with author's certificate (RZh-Metallurgiya, 1967, Abstract No 7G131) is unique in that, in order to raise operating reliability, the rotating column consists of a pi-shaped pillar, to which a crane arm is hinged, and a rotating platform, on which are mounted the mechanism for rotating the column, the control panel, and hydraulic lifting jacks for hoisting the crane arm. The mechanism for rotating the column is made in the form of two hydraulic cylinders with two-way pistons, rigidly connected by racks meshing with an immobile pinion shaft. Two illustrations.
1/1

USSR

UDC 547.024

~~BICHASHVILI, A. D., Academy of Sciences, GeorgianSSR, Institute of Inorganic Chemistry and Electrochemistry~~

"Evaluation of the Contribution of Excitation to Free Radical Formation of Alkane Radiolysis"

Tbilisi, Soobshcheniye Akademii Nauk Gruzinskoy SSR, Vol 62, No 1, Apr 71,
pp 73-76

Abstract: A method is proposed for evaluation of the relative contribution of excitation and ionization to the formation of free radicals during gamma-radiolysis of alkanes is discussed. The radiation yields of the radicals formed at 77°K according to the electronic excitation mechanism for alkane-methiols, alkylbenzenes, and alkyl sulfides are compared. The yield of radicals formed by excitation in alkanes is approximately 1.2-1.45 per 100 ev.

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1/2 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--CARNALLITE HYDROLYSIS PRODUCTS IN AN ATMOSPHERE OF HYDROGEN
CHLORIDE AND WATER VAPOR STUDIED UNDER CHEMICAL EQUILIBRIUM CONDITIONS
AUTHOR--(03)-SAVINKOVA, YE.I., VILNYANSKIY, YA.YE., BICHIKHINA, L.S.

COUNTRY OF INFO--USSR

SOURCE--ZP. PRIKL. KHM. (LENINGRAD) 1970, 43(3), 513-18

DATE PUBLISHED-----70

B

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROLYSIS, HYDROGEN CHLORIDE, WATER, MAGNESIUM OXIDE,
POTASSIUM CHLORIDE, CHEMICAL EQUILIBRIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0733

STEP NO--UR/0080/70/043/003/0513/0518

CIRC ACCESSION NO--AP0119640

UNCLASSIFIED

2/2 01C UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0119640
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WHEN HEATED IN AN ATM. OF HCL AND
H SUB2 O AT 250-390DEGREES THE TITLE MINERAL HYDROLYZED ACCORDING TO THE
FOLLOWING SPECIFIC CONDITIONS: LESS THAN OR EQUAL TO 2.5PERCENT HCL AND
GREATER THAN OR EQUAL TO 370DEGREES GAVE KCL AND MGO, LESS THAN OR EQUAL
TO 2.5PERCENT HCL AND LESS THAN OR EQUAL TO 370DEGREES GAVE KCL AND MG
SUB2 NEGATIVEN (OH) SUBN, 3.5-5.4PERCENT HCL AT A WIDE TEMP. RANGE GAVE
KMGCL SUB2.5(OH) SUB0.5, AND GREATER THAN OR EQUAL 5.5PERCENT HCL GAVE
KMGCL SUB2 TIMES 67(OH) SUB0.33. FACILITY: URAL. POLITEKH.
KNST. IM. KIROVA, SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

UDC 615.373.576.851.315.098.31].015.4:612.111

(5)

SOLOV'YEV, V. D., KOBRINSKIY, G. D., DOMARADSKIY, I. V., LAVRUSHKO, V. S., LOBANOV, V. V., BICHUL', K. G., GAL'TSEVA, G. V., RASSUDOV, and PUSHNITSA, N. P., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, and Rostov-on-Don Antiplague Institute

"Effect on Erythrocytes of the Receptor-Destroying Enzyme from Filtrates of Cholera Vibrio Cultures"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972, pp 42-46

Abstract: Erythrocytes treated with filtrates of cholera vibrio cultures lose their capacity for agglutination by certain viruses. The authors studied this phenomenon of the "receptor-destroying enzyme" (neuraminidase) to determine the possibility of using it as an aid in diagnosing cholera. In in vitro experiments with guinea pig erythrocytes, filtrates of classic *MAG*, and *El Tor* vibrio cultures prevented the cells from being agglutinated by swine influenza virus, whereas filtrates of the control cultures (*Comamonas*, *Pseudomonas*, and *E. coli*) did not do so. The same effect was observed in the case of erythrocytes from the intestinal contents of suckling rabbits infected with various cholera vibrio strains. An investigation of the intestinal contents of 279 patients 1/2

(5)

USSR

SOLOV'YEV, V. D., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972, pp 42-46

suffering from gastritis, dysentery, and other gastrointestinal disorders with symptoms resembling those produced by El Tor cholera showed that the hemagglutination reaction was negative in 94% of those over 1 year of age and in 46% of the infants.

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USSR

UDC 576.858.75.095.5.097.5

BICHURINA, M. A., NIKITINA, L. YE., and FRIDMAN, E. A., Leningrad Scientific Research Institute of Epidemiology and Microbiology imeni Pasteur

"Utilization of the Method of Differentiating Antibodies of Different Molecular Weight for Determining the Extent of Antigenic Differences Between Influenza Virus Variants"

Moscow, Voprosy Virusologii, No 5, Sep/Oct 72, pp 529-532

Abstract: White rats were successively immunized with different influenza virus variants at intervals of 1.5-2 months. Blood samples were collected repeatedly and, by means of a sulphydryl reagent, the antibodies were differentiated into two groups of different molecular weight: 19S and 7S. Immunologically significant differences were observed between influenza A2/Hong Kong/68 virus and the preceding variants of influenza A2 virus. The differences found between A2/57 and A2/65 were less pronounced. It is suggested that the presented method of differentiating related antigens on the basis of immunological memory may be tested on a wider range of antigens.

1/1

USSR

UDC: 620.17.171

KONONCHUK, N. I., AKIMOV, L. N., VASIL'YEV, B. N., LAPITSKIY, Yu. A.,
BELYAYEV, M. S., BICHUTSKAYA, O. V., KOPYLOV, A. A., TIKHOMIROVA, V. A.,
Moscow

"Study and Evaluation of the Kinetics of Fatigue Rupture of Heat-Resistant
Alloys"

Kiev, Problemy Prochnosti, No 11, 1970, pp 19-23

Abstract: The results of an investigation of the fatigue resistance of heat-resistant alloys with symmetrical and asymmetrical loading cycles show significant and varied sensitivity to asymmetry in the loading cycle, depending on the type of alloy and test mode (temperature, number of loading cycles, etc.). This paper studies the kinetics of the development of fatigue cracks in heat-resistant alloy on the basis of the actual endurance characteristics with symmetrical and asymmetrical loading cycles. The process of specimen rupture was divided into two stages: the stationary stage before formation of the main crack and the nonstationary stage of development of the main crack to a certain depth, for example 10% of the 1/2

USSR

KONOCHUK, N. I., AKIMOV, L. M., VASIL'YEV, B. N., LAPITSKIY, Yu. A.,
BELYAYEV, M. S., BICHUTSKAYA, O. V., KOPYLOV, A. A., TIKHOMIROVA, V. A.,
Moscow, Kiev, Problemy Prochnosti, No 11, 1970, pp 19-25

specimen thickness. A formula is produced for the "viability factor" which, in combination with calculation of the values of Δt_i and t_{tr} , can describe the kinetics of development of fatigue cracks in various alloys. This factor expresses the sensitivity of the alloy to the development of the fatigue crack on the basis of the experimental characteristics of endurance of real alloys.

2/2

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USSR

UDC 620.172:193.57

POPOVICH, V. V., BICHUYA, L., ZAMORA, M. F., MIZETSKIY, V. L., SHIL'NIKOVA, G. K., BEREZHKO, B. I., and CHAYEVSKIY, M. I., Institute of Physico Mechanics, Academy of Sciences, UkrSSR, L'vov; L'vov Polytechnical Institute

"Influence of Smelting Method on the Physical and Mechanical Properties of 15KhS1MFB Steel"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 6, 1970, pp 93-97

Abstract: The corrosion resistance and long-term strength of ordinary and vacuum-smelted 15KhS1MFB steel were studied in a fused lead-bismuth eutectic. The changes in microstructure, microhardness, coercive force, and electrical resistance of specimens tested for corrosion and long-term strength were studied. It is demonstrated that 15KhS1MFB steel, regardless of the method of smelting, is little influenced by the eutectic Pb-Bi alloy at 470-550°C. The vacuum-smelted steel has practically the same long-term strength as the ordinary steel, but somewhat better plasticity.

1/1

- 60 -

1/2 048

UNCLASSIFIED

PROCESSING DATE--11SEP70.

TITLE--CORROSION RESISTANCE OF MOLYBDENUM COATINGS PREPARED BY CONTACT
MELTING -U-

AUTHOR--UELSKIY, A.A., BICHUYA, A.L., GARASIM, YU.A., CHAYEVSKIY, M.I.

COUNTRY OF INFO--USSR

B

SOURCE--FIZ. KHIM. MEKH. MATER. 1970, 5(6), 704-8

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CORROSION RESISTANCE, MOLYBDENUM, METAL COATING, HYDROCHLORIC
ACID, ALLOY DESIGNATION, NICKEL ALLOY, NITRIC ACID, SULFURIC ACID,
TITANIUM STEEL, CHROMIUM NICKEL STEEL, LEAD ALLOY, BISMUTH ALLOY,
EUTECTIC/(U)E1437B NICKEL ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY PEEL/FRAME--1988/0623

STEP NO--UR/0369/70/005/005/0704/0703

CIRC ACCESSION NO--AP0105602

UNCLASSIFIED

2/2 048

CIRC ACCESSION NO--AP0105602

UNCLASSIFIED

PROCESSING DATE--11SEP70.

ABSTRACT/EXTRACT--(u) GP-0-

ABSTRACT. THE RESISTANCE TO CORROSION AND FATIGUE OF A CR-Ni-Ti STEEL AND OF ALLOY EI 437B WAS IMPROVED BY A MO COATING APPLIED BY CONTACT MELTING. THE CORROSION RESISTANCE OF THE STEEL WAS TESTED IN 10PERCENT HCL AND IN 80PERCENT H SUB2 SO SUB4. TWO KINDS OF MO COATED SPECIMENS WERE TESTED, ONE OBTAINED BY DIFFUSION COATED WITH MO BY EITHER METHOD WAS MORE RESISTANT THAN UNPROTECTED STEEL. HOWEVER, THE DIFFUSION COATED SPECIMEN WAS MORE RESISTANT. FOR HIGH TEMPS. THE MO COATING APPLIED BY FUSION IS PREFERABLE. THE MO COATING ON ALLOY EI 437B HAD NO EFFECT ON THE CORROSION IN 30PERCENT HNO SUB3 AND ALMOST NONE ON THE HEAT RESISTANCE OF THE ALLOY AT 1050DEGREES. IT PROVED VERY RESISTANT IN PB-BI EUTECTIC AT 700DEGREES.

UNCLASSIFIED

BIDA, ZIA.

JPRS 60560
16 November 1973

(11)

DISSOCIATING GASES AS COOLANTS AND WORKING
SUBSTANCES AT ATOMIC POWER PLANTS

B

Translation of Russian-language materials presented at the
Third All-Union Conference by A. K. Krasin, et al.,
Dissotsiruushchiye Gazy kak Tekhnositoi i Rabochiye Tela
Energeticheskikh Ustanovok, 1973, Minsk, UDC: 621.31+622.987,
Signed to press 12 April 1973

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4	Dissociating Gases as Coolants for Fast Reactors (A. K. Krasin).....
11	Development and Optimization of Parameters of Atomic Power Plants With High-Power Fast Reactors Using Dissociating Gases as Coolants (N. V. Nestorenko).....
25	Corrosion of Materials in Dinitrogen Tetroxide (A. M. Sukhotin).....
43	Some Results of Technological and Economic Optimization of the Thermodynamic Parameters of Atomic Power Plants With Fast Reactors With Dissociating H_2O_2 Coolant (A. K. Krasin, et al.).....
50	Complex Technological and Economic Investigations of Circuits and Parameters of Atomic Power Plants With a Dissociating Working Substance (L. S. Popyrin, N. N. Starostenko).....
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[I - USSR - L]

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6076
16 NOV 23

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- c -

USSR

UDC 51

BIDER, U. YA., GROMOV, G. G., PIROGOV, V. V.

"Multilevel Optimization in the Problems of Reconstructing Complex Systems"

V sb. Sistemotekhnika (Systems Engineering--collection of works), Kiev, 1971,
pp 293-302 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V383)

No abstract

1/1

- 33 -

Stress Analysis and Stability Studies

USSR

UDC 620.10

BIDERMAN, V. L., Doctor of Technical Sciences, Professor,
GOMAN, A. M., Aspirant, SUKHOVA, N. A., Candidate of Technical
Sciences, Docent, Moscow Higher Technical School imeni N. E.
Bauman)

"Determination of the Stresses and Dislocations in a Ring of
Incompressible Material With Mixed Boundary Conditions"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye,
No 12, 1970, pp 5-8

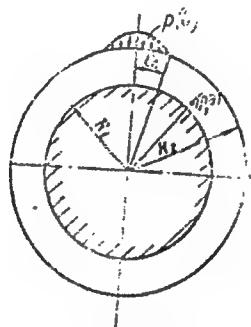
Abstract: The article deals with the solution of a problem of
two-dimensional deformation for a ring of incompressible material,
loaded along the external contour by a radial compressive load
 $p(\theta)$ on the sector $-\theta_0 \leq \theta \leq \theta_0$ and rigidly fastened along the
internal contour. The solution to the problem is sought in
functions of the complex variable $\varphi(z)$ and $\psi(z)$. For the case
of /page 5 a/ the obtained relationships of stresses and dis-
locations were computed on a digital electronic computer. The

1/2

USSR

BIDERMAN, V. L., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 12, 1970, pp 5-8

calculation results for $R = 0.5$ and $\theta_0 = 0.2$ are represented graphically. 3 figures, 2 bibliographic entries.



2/2

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Crystals & Semiconductors

USSR

UDC: 621.373.5

BIDIKHOV, S. A., LANDA, P. S., Department of General Physics
for Specialists in Mechanics and Mathematics

"Investigation of the Conditions of Excitation of a Piezoelectric Semiconductor Oscillator by the Method of Electronic Modeling"

Moscow, Vestnik Moskovskogo Universiteta, Seriya III, Fizika,
Astronomiya, Vol 14, No 1, Jan/Feb 73, pp 102-104

Abstract: Ultrasonic and electrical oscillations close to monochromatic may be stimulated in a piezoelectric semiconductor crystal when the velocity of electron drift exceeds the speed of sound. The equation for the emission threshold in the linear approximation, with boundary conditions corresponding to a mechanically unloaded crystal with ideally conductive weightless metal contacts, is studied by the method of analog simulation for the case of a short resonator and large conductivities. It is shown that an exact solution is necessary, under these conditions, for determining the critical rate

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USSR

BIDIKHOV, S. A., LANDA, P. S., *Vestnik Moskovskogo Universiteta, Seriya III, Fizika, Astronomiya*, Vol 14, No 1, Jan/Feb 73, pp 102-104

of electron drift. The method proposed in this paper for solution on an analog computer can be used to study the equation for emission, with arbitrary boundary conditions. For a resonator with ideally reflecting boundaries, losses on the ends of the crystal may be accounted for by equivalent scaling of conductivity.

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1/2 044
TITLE--UNCLASSIFIED
UNCLASSIFIED AUTOOSCILLATION REGIMES IN AN ANNULAR GAS LASER -U-
PROCESSING DATE--04DEC70
AUTHOR--(03)-BIDIKHOV, S.A., LANDA, P.S., LARIONTSEV, YE.G.
COUNTRY OF INFO--USSR B
SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 3, 1970, PP 529-538
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAS LASER, LASER EMISSION COHERENCE, LASER PUMPING, LASER
STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1351

STEP NO--UR/0109/70/000/003/0529/0538

CIRC ACCESSION NO--AP0123309

UNCLASSIFIED

2/2 044

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0123309

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPETITION OF COUNTERBEAMS IS STUDIED IN AN ANNULAR GAS LASER DURING CONTACT DUE TO SCATTERING. STABILITY OF SINGLEWAVE AND DOUBLEWAVE REGIMES IS INVESTIGATED AND CONDITIONS ARE OBTAINED WHICH ARE ACCCOMPANIED BY PERIODIC PUMPING OVER OF ENERGY FROM ONE WAVE TO THE OTHER. A STUDY WAS ALSO MADE OF AUTOOSCILLATION INTENSITIES OF THE PHASE DIFFERENCE OF COUNTERBEAMS. BASIC CHARACTERISTICS OF STEADY STATE REGIMES ARE DETERMINED AND THEIR STABILITY INVESTIGATED.

UNCLASSIFIED

• USSR

BIDNENKO, S. I., Kiev Scientific Research Institute of Epidemiology, Microbiology, and Parasitology, Kiev

"Prospects of the Method of Ultrasound Disintegration for the Isolation of Antigens from Fungi of the Genus Candida and a Study of the Application of these Antigens in Serological Reactions"

Kiev, Mikrobiologicheskiy Zhurnal, Vol 33, No 6, Nov/Dec 71, pp 762-763

Abstract: In work conducted with standard strains of *Candida albicans* and *C. tropicalis* and a strain of *C. albicans* isolated from a patient with generalized candidiasis, fungal antigens were isolated by the method of ultrasound disintegration. Treatment with ultrasound was carried out on a UZ-1 apparatus at a frequency of 800 kc. The optimum conditions were treatment for 3-4 hours at a power of 4.5-5 wt/sq. cm. in a volume of 100 ml of a suspension in distilled water with a concentration of 30 mg water-containing biomass per ml. After centrifuging for 30 min at 6500 rpm, the supernatant liquid was dried by lyophilization. The yield of dry antigen was approximately 100 mg per 3 g water-containing biomass. Serological testing and comparison with antigens isolated by the beta-naphthol method according to Elinov (because the latter are fairly pure polysaccharides) indicated that the ultrasound

USSR

BIDNENKO, S. I., Mikrobiologicheskiy Zhurnal, Vol 33, No 6, Nov/Dec 71, pp 762-763

antigens were as sensitive as the beta-naphthol antigens in the reactions of passive hemagglutination and antibody precipitation carried out on rabbit immune sera. The precipitation tests showed that the ultrasound antigens were not homogeneous.

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USSR

B

UDC: 612.746.6

BIDULYA, P. N. (deceased), LIVSHITS, V. B., and BELYY, D. I.

"Influence of Pressure on Rate of Cooling During Crystallization"

Izv. VUZ, Tsvetnaya Metallurgiya, No 3, 1970, pp 161-163

Abstract: This work represents an attempt to record the cooling rate using a practically inertia-free apparatus. The cooling rate curves were recorded using a N-700 oscilloscope with a set of type M 001 oscillographic galvanometers. The temperature of ferrous metals was measured using a type KHA thermocouple. The temperature of steels was measured using type VR 5/20 and PP thermocouples. The junctions were not shielded, and were placed in a matrix at 15-25 mm from the floor of the press mold. Typical cooling curves with and without pressure are presented for zinc. The cooling rate is considerably higher for cooling under pressure than for cooling with free crystallization. It was found that cooling rate is practically independent of pressure during crystallization at pressures over 15 t. The cooling rate with solidification under pressure was approximately one and one-half to two times higher than with free crystallization. It was impossible to determine the solidification rate more precisely due to difficulties of precise measurement of the actual crystallization interval. The authors conclude that the main factor determining the acceleration in solidification is improved heat transfer.

1/1

USSR

BIDZILYA, I., Candidate of Biological Sciences

"Problems of Plant Radiobiology. First All-Union Symposium in Kiev"

Kiev, Visnik Akademiyi Nauk Ukrayins'koyi SSR, No 2, Feb 71, pp 81-83

Abstract: An account is given of proceedings of the first all-union symposium of specialists in plant radiobiology held in Kiev. About 150 scientists representing scientific organizations of the Soviet Union heard and discussed 103 reports and talks on the subject. The opening address was delivered by Academician P. A. Vlasyuk — Director of the Institute of Plant Physiology, Academy of Sciences Ukrainian SSR, who spoke on the problem confronting the plant radiobiologists, particularly problems bearing on genetics and selection and the utilization of radiation for improving the quality and productivity of agricultural crops.

The basic processes by which radiation induces injuries to plants -- direct action on the plant, radiolysis, effect of organic compounds on free radicals, and peroxidation with the formation of chemical substances commonly known as radiotoxins, were summarized in detail by O. M. Kuzin.

Several reports dealt with the problem of the role which free radicals play in the development of plant injuries caused by irradiation. It was
1/3

USSR

BIDZILYA, I., Visnik Akademiyi Nauk Ukrayins'koyi SSR, No 2, Feb 71, pp 81-83 indicated that different doses and types of ionizing radiation differently affect the free radicals, thereby affecting also the types of radiation injuries to the plants.

Theoretical and experimental data related to the problem of evaluating the coefficient of the relative biological effectiveness of different types of ionizing radiation when applied to plants in the presence of different physical, biological, and physiological factors were cited by Yu. G. Grigor'yeva. The speaker stressed also the need for deeper and broader studies of plant radiobiology as a component part of space biology and space radiobiology. The importance of further study of the effect of ionizing radiation on the chromosomes of plant cells was stressed in a number of reports.

The talks on radiation biochemistry dealt mainly with the adverse effects of radiation on nucleic acids and proteins, amino acid composition of the proteins in the irradiated plants, and its inhibiting effect on some of the biochemical processes in the plant organism.

Other talks dealt with the effect of planting of irradiated seeds on the growth, development, and productivity of the plants. Investigations to this effect are being conducted in the Ukraine, Moldavia, Uzbekistan,
2/3

USSR

BIDZILYA, I., Visnik Akademiyi Nauk Ukrayins' koyi SSR, No 2, Feb 71, pp 81-83
Kazakhstan, Baltic republics, and other regions of the country.

The aspects of radiosensitivity and radioresistance of plants were the topics of a number of talks. It was indicated that physical, physiological, and ecological factors at the time the plants are being irradiated play an important role in this respect.

Considerable attention was paid to the talk by D. M. Grodzinskiy concerning the chemical protection of plants from the effects of radiation and their post-irradiation restoration. The speaker outlined the present positions of the theory of plant radioprotection, classifying also the type of the protective action.

A resolution adopted at the symposium called for the further development of radiobiology of plants, and closer cooperation between the scientific collectives. The next all-union symposium of plant radiobiologists will be held in 1973.

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USSR

UDC 581.1.039

BIDZILYA, N. I., and ZEZINA, N. V., Institute of Plant Physiology, Academy of Sciences Ukrainian SSR, Kiev

"Isolation of Plant Melanins and a Study of Their Radiation-Protective Properties"

Kiev, Fiziologiya i Biokhimiya Kul'turnykh Rasteniy, Vol 3, No 1, Jan/Feb 71,
pp 55-60

Abstract: The melanins of the skin of *Vicia faba* beans were extracted with hot water (fraction 1) and an 0.5 N solution of NaOH (fraction 2). Both fractions were characterized by means of spectra in the visible and UV ranges, IR spectra, and EPR spectra. Treatment of white mustard (*Sinapis alba*) seeds by vacuum infiltration with solutions of melanins of fraction 1 in concentrations of 0.01, 0.02, and 0.03% followed by irradiation of the seeds with gamma rays in doses of 150 and 200 krad indicated that the melanins had a pronounced radiation-protective effect as shown by the rate of seed germination, increase in the height of seedlings, and content of dry matter in seedlings vs. those for controls. The maximum protective effect was exerted by the 0.02% solution. The EPR spectra showed that the melanins were paramagnetic to a considerable degree. One may assume that the protective effect exerted by them was due to binding of free radicals that were formed under the effect of gamma-irradiation.

Inorganic Compounds

USSR

UDC 541.49 + 546.65

DAVIDENKO, N. K., BIDZILYA, V. A., DERKACH, G. I. (Deceased), and
YATSIMIRSKIY, K. B., Institute of Physical Chemistry Imeni L. V. Pisarzhevskiy,
Acad. Sc. USSR

"Reaction of the Lanthanum and Neodinium Nitrates With New Types of Organophosphorus Ligands"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 17, No 9, Sep 72, pp 2369-2375

Abstract: Reaction of lanthanum and neodinium nitrates with ligands $(C_2H_5O)_2P(O)CH_2COOC_2H_5$ (L-1), $(C_2H_5O)_2P(O)CH_2COO\text{-tert-}C_4H_9$ (L-2), and $(C_6H_5)_2P(O)CH_2C(O)CH_3$ (L-3) in tetrahydrofuran was studied by the conductometric, spectrophotometric, and proton magnetic resonance methods. The equilibrium constants of the formation of equimolar complexes in tetrahydrofuran have been determined by the differential spectrophotometric method. Solid complexes of the composition $Ln(NO_3)_3 \cdot 2L-3 \cdot nH_2O$, where $Ln = La$ or Nd , and $n = 1$ or 2 , have been isolated. It has been shown by means of IR spectra that the ligands are coordinated with the metal through the oxygen atom of the phosphoryl group. The complex formation ability of the ligands depends on the substituents at $P=O$ and $C=O$. OR-substituted ligands at $P=O$ and $C=O$ give less stable complexes than the R-substituted ones (R = alkyl or aryl groups).

1/1

USSR

RAZMADZE, A. N., BIDZINASUVILL, R. I.

"Experimental Study of Combined Prestressed Sprengel Systems"

Tr. Gruz. Politekhn. In-t., [Works of Georgian Polytechnical Institute], 1971, No 2(142), pp 198-206. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1V952 by D. K. Bendyug).

Translation: Results are presented from experimental studies of three models of Sprengel systems on the effects of a longitudinal compressive force. The rigid Sprengel elements consist of steel tubes, the flexible elements (pre-stressed belts) consist of cables. The experiments were performed on a special test stand. The loading was applied by a hydraulic jack in stages of 1,000 kg. Theoretical calculation for the experimental model of the prestressed Sprengel system was used to determine preliminarily the critical force and prestressing force of the cables. Graphs of the experimental data show that the Sprengel system operated up to loss of stability in central compression, since the bending was very slight, but in the loading sector near the critical load the linear "load-bending" graphs are converted to curved graphs. The loss of stability was characterized by the moment at which the needle of the manometer suddenly stopped and the readings on the scale began to drop. It is established by comparison that the prestressing of force produced theoretically 1/2

USSR

UDC: 539.1.07.55:621.565

~~RIGANT, A. Ya.~~, BANASHEK, V. E., RUDIK, M. P., SKAKODUB, G. A.

"A Cryostat Housing for Semiconductor Detectors of Radioactive Emission"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26,
1970, Soviet Patent No 278907, Class 21, filed 31 Jul 67, p 70

Abstract: This Author's Certificate introduces a cryostat housing for semiconductor detectors of radioactive emission. As a distinguishing feature of the patent, thermal coupling with the ambient atmosphere is reduced by making the unit in the form of an evacuated glass tube with metal vessels fastened to the end by means of glass-to-metal seals. A metal bulb is attached to one of these vessels with a vacuum-tight seal, and a metal refrigerator tube with radioactive emission detector attached is fastened to the other vessel. The radiation emission detector is fastened to the metal bulb by means of a spring contact, and a sorption pump is enclosed in the above-mentioned refrigerator tube.

1/1

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Mining

USSR

UDC:550.93

BIGAYEVA, A. R., KHUSNUTDINOV, R. I., ASKAROV, F. A.

"The Accuracy of Determination of the Absolute Age of Geological Formations by the K/Ar Method"

Tashkent, Uzbekskiy Geologicheskiy Zhurnal, No. 6, 1970, pp. 20-23

Abstract: The potassium-argon method, based on determination of the quantity of radiogenic Ar⁴⁰ accumulated in a specimen since its formation as a result of natural decay of K⁴⁰, is one of the most widespread methods of determining the absolute age of geological formations. This article presents mathematical formulas for determination of the relative mean square error in the measurement of absolute age. This error is found to depend on the mean square errors in determination of Ar⁴⁰ and K. Another formula indicates the dependence of mean square error on age with identical measurement errors for the contents of the two materials. The error decreases with increasing specimen age.

1/1

USSR

BIGDAY, L. K.

UDC: 8.74

"Programming Expressions in the ALMO/ASVT Compiler"

Tr. In-ta elektron. upravl. mashin (Works of the Institute of Control Computers), 1972, vyp. 17, pp 56-62 (from RZh-Kibernetika, No 5, May 73, abstract No 5V780 by V. Ostrovskiy)

Translation: In analyzing the ASVT command system, the author comes to the conclusion that the operation code byte for most commands can be represented as a triplet of fields (i, j, k) where the i (0-th and 1-st digits) reflects the format of the command, the j (2-d and 3-d digits) corresponds to the form of representation and the size of the operands, and the k (4-th-7-th digits) expresses the essence of the operation. Using this representation, the author proposes that when compiling expressions the commands with different values of k in an operation code byte be joined into a single group. Then the operation code for each command of such a group can be generated from its parts -- i, j and k. Use of this method

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USSR

BIGDAY, L. K., Tr. in-ta elektron. upravl. mashin, 1972, vyp.
17, pp 56-62

in the ALMO/ASVT translator reduced the number of checks on parameters done for each command by a factor of 6-7, and appreciably reduced the volume of the block for processing expressions. Out of 83 commands compiled, 71 were formed by parts. The volume of the block for processing expressions represented in postfix Polish notation is approximately 1200 commands.

2/2

- 98 -

USSR

UDC 669-154.42+62-404.1:293

VLASOV, N. N., KHUSNOYAROV, K. B., and BIGEYEV, A. M., Ural Institute of Ferrous Metals

"Effect of Purging a Metal With Argon on Its Flowability"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy--Chernaya Metallurgiya, No 6,
Jun 73, pp 33-35

Abstract: The effect of argon purging on the flowability of a molten metal was examined. In all- 342 measurements were taken from 57 heats, from which it was established that the flowability of a metal after an argon blow is increased on the average of 11.9% with variation limits of 3.3-17.7%. The increased flowability occurs in the first five minutes of the blow, then it stabilizes and becomes almost independent of the type and amount of added deoxidizing agent. The increased flowability can be explained by the reduced content of nonmetallic inclusions and some rearrangement of the molten melt structure. 3 figures, 7 bibliographic references.

1/1

172 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--PHOTONEPHELOMETRIC METHOD FOR DETERMINING BETA LYSINS IN SERUM -U-

AUTHOR--(03)--BUKHARIN, O.V., LUDA, A.P., BIGEYeva, R.I.

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (3), 160-2

DATE PUBLISHED-----70

B

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BACTERICIDE, BLOOD SERUM, BACILLUS SUBTILIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0431

STEP NO--UR/9099/70/000/003/0160/0162

CIRC ACCESSION NO--AP0132656

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0132656
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RELIABLE PHOTONEPHELOMETRIC
METHOD FOR DETN. OF BETA LYSINS IN SERUM WAS DEVELOPED. IT IS BASED ON
ANTIBACTERIAL ACTIVITY OF SERUM CONTG. BETA LYSINS AGAINST BACILLUS
SUBTILIS. FACILITY: ORENBURG. MED. INST., ORENBURG, USSR.

UNCLASSIFIED

USSR

UDC 666.76:669.056.9

ABZGIL'DIN, F. YU., AMIROV, R. A., and BIGLOV, A. KJ., Ufa Aviation Institute
imeni Sergo Ordzhonikidze, and KHOROSHAVIN, L. B., Eastern Institute of
Refractories

"Refractory Coatings on Phosphate Bonds"

Abstract: Based on results of investigating the adhesive and cohesive strengths and thermal stability of materials on phosphate bonds, optimum compositions of coatings for the alloys 1Kh18N9T, EI-703, Ep-99, VT-9, OT-4, and EI-961, bronze Kh08, molybdenum and graphite were determined. The investigation included refractory coatings based on titanium, zirconium, hafnium, and silicon; hafnium, boron, and silicon nitrides; mullite, magnesian spinel, and calcium, barium, and strontium zirconates; molybdenum disulfide and disilicide and calcium titanate. Results are presented of determinations of working temperatures, ultimate shear strength, thermal stability of coatings, and electric conductivity and temperature conductivity of some compositions. The coatings are recommended as structural materials at 1000-1800°C. The electroninsulating materials on a corundum base can be used for preparing Nichrome tensometers with the mentioned alloys. The coatings materials can also be used as ceramic adhesives for joining alloys, particularly graphite and ceramics, of different compositions. Two figures, three tables, 1/1

USSR

UDC: 539.374

BIGRER, I. A., SELIFONOVA, L. P., Moscow

"Three-Dimensional Stress State in Turbine Blades"

Kiev, Problemy Prochnosti, No 3, Mar 73, pp 7-10.

Abstract: An approximate theory of the three-dimensional stress state in turbine blades is studied, in which the hypothesis of flat cross sections is supplemented by solution of the related planar problem. As an example, the authors study determination of unstable stresses in a gas turbine blade. The equations are solved by the method of finite differences, the modulus of elasticity and Poisson's coefficient assumed constant for all points in the cross section. The influence of the three-dimensional stress state is significant in this case.

1/1

- 75 -

1/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--FASTENING METAL FLANGES TO FIBERGLASS SHELLS -U-

AUTHOR--(03)-BIGUL, B.A., GUMENYUK, V.S., SYTKIK, V.S.

COUNTRY OF INFO--USSR

B

SOURCE--KIEV, TEKHNOLOGIYA I ORGANIZATSIIA PROIZVODSTVA, NO 1, 1970, PP
99-100

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--FIBERGLASS, SHELL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1338

STEP NO--UR/0418/70/000/001/0099/0100

CIRC ACCESSION NO--AP0123296

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123296

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDY THE FASTENING OF METAL FLANGES TO FIBERGLASS SHELLS. THE FASTENING IS ACCOMPLISHED BY WINDING. A PARTICULAR FEATURE OF THIS CONSTRUCTION IS THE FASTENING OF THE FIBERGLASS SHELL, UNWEAKENED BY HOLES OR CUTS, TO METAL FLANGES USING CIRCULAR WEDGES. THE ADVANTAGE OF THIS METHOD OF FASTENING IN COMPARISON TO EXISTING METHODS IS ITS SIMPLICITY AND THE PRESENCE OF CONCENTRATED STRESS IN THE FLANGE FASTENING JOINT ALONG WITH A CLEAR DETERMINING OF THE AREA OF LOADING. THE ORIGINAL ARTICLE HAS ONE ILLUSTRATION AND TWO BIBLIOGRAPHIC ENTRIES.

UNCLASSIFIED

1/2 052 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--HIGH PRESSURE BALLOONS MADE FROM GLASS FIBER REINFORCED PLASTICS
-U-
AUTHOR--(05)--BIGUL, B.A., GUHENYUK, V.S., KARAMASH, N.P., KRISTUK, A.A.,
URBANSKIY, S.V.
COUNTRY OF INFO--USSR *B*
SOURCE--MEKH. POLIM. 1970, 6(1), 149-52
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--HIGH PRESSURE, BALLOON, GLASS FIBER, REINFORCED PLASTIC,
MATERIAL DEFORMATION, MECHANICAL STRENGTH, TEST METHOD/(U)HC55 6 250
GLASS, (U)EF64 REINFORCED PLASTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0025

STEP NU--UR/0374/70/006/001/0149/0152

CIRC ACCESSION NU--AP0114425

UNCLASSIFIED

2/2 052

CIRC ACCESSION NO—AP0114425

UNCLASSIFIED

PROCESSING DATE--09UCT70

ABSTRACT/EXTRACT--(U) GP-0— ABSTRACT. CONSTRUCTION OF A FLATTENED ELLIPSOID BALLOON PREPD. FROM HC55-6-250 GLASS REINFORCED EFB-4 IS DESCRIBED. DEFORMATION, STRENGTH, AND CYCLIC TESTING DATA ARE GIVEN. FACILITY: INST. MEKH., KIEV, USSR.

UNCLASSIFIED

USSR

UDC: 621.314.26

BABAK, O. V., BIGUN, Ya. F., BOLOTOV, B. V., SITNIKOV, L. S., UTYAKOV, L. I.,
KHOMOVNENKO, M. G., Institute of Electrodynamics, Academy of Sciences of
the UkrSSR

"A Pulse Frequency Divider"

USSR Author's Certificate No 251000, filed 20 May 68, published 30 Jan 70
(from RZh-Avtomatika, Telenekhanika i Vychislitel'naya Tekhnika, No 11,
Nov 70, Abstract No 11A183 P)

Translation: This Author's Certificate introduces a pulse frequency divider based on a storage core made of a ferromagnetic material with rectangular hysteresis loop. To insure the possibility of regulating the division coefficient, the storage core with its windings is placed between the poles of a core of magnetically hard material. The control winding of this second core is connected to a key coincidence gate through a pulse shaper circuit. A pulse with fixed amplitude and duration is fed to the input of the magnetic divider. Before arrival of the first pulse, the core of the divider is in a state of negative magnetization and the shaper transistor is in the cutoff state. The first and each subsequent pulse increase the level of magnetization of the core up to the saturation point. When this happens, the tran-

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BABAK, O. V., et al., USSR Author's Certificate No 251000

sistor is switched to the active state and it shapes an output pulse. The circuit then returns to the initial state. The division coefficient of the frequency divider can be varied by changing the magnetization of the magnetically hard core, thus changing the hysteresis loop of the core with rectangular characteristics. One illustration. N. S.

2/2

- 40 -

USSR

UDC 621.357.2:66.061:669.783

BIKASHEV, G. K., YESIRKEGENOV, G. M., and KHUDAYBERGENOV, T. YE.

"The Influence of Fe:Ge Ratio on the Migration of Germanium in Solution During the Electrochemical Leaching of Sintered Wafers of the Type $xFe_2O_3yGeO_2$ "

Kazakhsk, politkh. in-t, Alma-Ata (Kazakstan Polytechnica Institute of Alma-Ata), 1972, 12 pp (Manuscript from a dep (expansion unknown) in VINITI (All-Union Institute of Scientific and Technical Information), No 5058-5072 Dep. (expansion unknown) from 13 Nov 1972 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L310)

Translation: Data are presented on laboratory studies on the leaching of wafers containing the oxides of Fe and Ge. Double sulfuric acid treatment of these wafers resulted in the extraction of 5 or 6% Germanium into solution. Applying an electric field having a constant current during the second stage of leaching very effectively transferred the Ge into a liquid phase.

1/1

1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CONVERSION OF VINYL CYCLOHEXANE ON A PALLADIUM CATALYST -U-

AUTHOR--(03)-GARIFZYANOV, G.G., BIKBULATOV, I.KH., VALITOV, R.B.

COUNTRY OF INFO--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(1), 28-33

18

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CYCLOHEXANE, PALLADIUM, CATALYST ACTIVITY, CYCLOHEXENE,
ETHYLBENZENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0573

STEP NO--UR/0204/70/010/001/0028/0033

CIRC ACCESSION NO--AP0119491

1997-0573-10

2/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0119491
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 4, VINYL CYCLOHEXENE (I) WAS EVAPD. AT 135DEGREES; MIXED WITH 4 MOLES N AND PASSED THROUGH HOT 0.8-1.2PERCENT PD-C CATALYST (30 ML) IN A QUARTZ TUBE (DIAM. 2 CM), AT A CONST. RATE OVER 40-120 MIN (PRIOR TO THE RUNS THE CATALYST WAS ACTIVATED WITH H 3 HR AT 135DEGREES). EVERY 5-10 MIN THE REACTOR EFFLUENT WAS ANALYZED CHROMATOGRAPHICALLY. CONVERSION OF I WAS STUDIED AT A SPACE VELOCITY OF 0.1-3 ML-MIN, AND AT TEMPS. 135 TO 220DEGREES. THE EFFLUENT PRODUCTS CONTAINED EHTYLCYCLOHEXENE (II), ETHYLBENZENE (III), AND ETHYLCYCLOHEXANE (IV). THE CONVERSION OF I INCREASED WITH INCREASING CATALYST TEMP. THE AMT. OF INTERMEDIATE II IN THE EFFLUENT INCREASED RAPIDLY TO A MAX. AT 150-5DEGREES, THEN DECREASED (CONVERTED INTO III AND IV). THE WT. RATIO OF III TO THE SUM OF II AND IV IN THE PRODUCTS OF 130-500DEGREES RUNS WAS 1.3-1.5; IT WAS 3.1-3.7 AT 210DEGREES. ETHYLCYCLOHEXADIENE WAS NOT DETECTED, BUT WAS PROPOSED AS AN INTERMEDIATE. FACILITY: STERLITAMAKSKII KHIM. ZVOD, STERLITAMAK, USSR.

UNCLASSIFIED

1/2 010

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--1,5,9,CYCLOCODECATRIENE -U-

AUTHOR--(03)-GARIFZYANOV, G.G., VALITOV, R.B., BIKBULATOV, I.KH.

COUNTRY OF INFO--USSR

B

SOURCE--U.S.S.R. 263,588

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CYCLIC GROUP, BUTADIENE, CATALYTIC ORGANIC SYNTHESIS, CHEMICAL
PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1589

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0135230

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0135230

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPD. IS PREPD. BY
TREATING 1,3,BUTADIENE WITH A CATALYTIC SYSTEM CONTG. NI HALIDE AND
TRIISOBUTYL ALUMINUM AT 100-30DEGREES UNDER INTENSIVE MIXING.
FACILITY: STERLITAMAKSKIY KHMICHESKIY ZAVOD.

UNCLASSIFIED

USSR

UDC 577.1:615.7/9

BIKBULATOV, N. T.

"Effect of Some Organosulphur Compounds on the Conditioned Reflex Activity of Animals and the Glutathione Content in the Blood"

V sb. Khimiya seraorgan. soyedin., soderzhashchikhsya v neftyakh i nefteproduktyakh (Chemistry of Organosulphur Compounds Contained in Petroleum and Petroleum Products -- collection of works), Vol 9, Moscow, Vyssh. shkola, 1972, pp 558-561 (from RZh-Biologicheskaya Khimiya, No 10, 1973, Abstract No 10F2112)

Translation: Treatment of rats with di-n-butyl sulfide (0.5 mg/liter, 2 hours a day or 1 mg/liter, 3 hours a day) or di-n-dibutyl sulfide (1 mg/liter 3 hours a day) demonstrated the presence in the compounds of a depressing effect of the higher divisions of the central nervous system. A single intramuscular injection of rabbits with di-isobutyl sulfide (300 mg -- 4 g/kg) or 2-methylthiophene (500 mg/kg) caused a reduction in the I^{-}SH content in the blood and a rise in the $\text{I}^{-}\text{SS-H}$ level.

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1/2 017

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--THE NATURE OF INTRANUCLEAR HERPETIC INCLUSIONS -U-

AUTHOR--(03)-BIKBULATOV, R.M., GOFMAN, YU.P., CHIBISOVA, V.A.

COUNTRY OF INFO--USSR

B

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 2, PP 199-204

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ELECTRON MICROSCOPY, VIRUS, DNA, RNA, GLYCOGEN, ACID
PHOSPHATASE, LIPID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0733

STEP NO--UR/0402/70/000/002/0199/0204

CIRC ACCESSION NO--AP0108939
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0108939

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTRON MICROSCOPIC, CYTOCHEMICAL AND IMMUNOFLUORESCENT EXAMINATION OF SPECIFIC HERPETIC INTRANUCLEAR INCLUSIONS WAS CARRIED OUT. IT WAS SHOWN THAT CLASSICAL INCLUSIONS OF THE A TYPE DESCRIBED BY COWDRY DID NOT TAKE PART IN SYNTHESIS OR FORMATION OF VIRUS PARTICLES. THEY CONTAINED DNA, BUT NO RNA, GLYCOGEN, LIPIDS OR ACID PHOSPHATASE COULD BE FOUND IN THEM. INCLUSION OF THE B TYPE CONSISTED OF FRAGMENTED NUCLEOLUS MATERIAL WHICH HAD CHANGED ITS TINTORIAL PROPERTIES UNDER THE INFLUENCE OF INFECTION. DIFFERENT MECHANISMS EXPLAINING THE NATURE OF SPECIFIC HERPETIC INTRANUCLEAR INCLUSIONS ARE SUGGESTED.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ACTIVITY OF SUCCINATEDEHYDROGENASE, HAD H SUB2 AND HADF H SUB2
DIAPHORASE IN CHICK EMBRYO FIBROBLAST CULTURE INFECTED WITH VACCINIA
AUTHOR--(03)--NOSIK, N.N., YEGIAZARYAN, L.A., BIKBULATOV, R.M.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 3, PP 275-277

DATE PUBLISHED-----70

B

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DEHYDROGENASE, TISSUE CULTURE, BIOSYNTHESIS, VIRUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1938

STEP NO--UR/0402/70/000/003/0275/0277

CIRC ACCESSION NG--AP0125527

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NU--APO125527

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REPRODUCTION OF VACCINIA VIRUS IN CHICK EMBRYO FIBROBLAST CULTURE WAS ACCCOMPANIED BY EARLY ACTIVATION OF SUCCINATEDEHYDROGENASE, AT 3-6 HOURS AFTER INOCULATION, WHEREAS AT 9-12 HOURS AFTER INFECTION THE ACTIVITY OF THE ENZYME DECLINED. THE ACTIVITY OF NAD-H SUB2 AND NADF-H SUB2 QIAPHORASE ALSO INCREASED AS EARLY AS 3 HOURS AFTER INFECTION, BUT IN THIS CASE THE DECLINE OF ENZYMATC ACTIVITY WAS OBSERVED LATER, ONLY 24-48 HOURS AFTER INFECTION. THE EVIDENCE OBTAINED INDICATES THE POSSIBLE RCLÉ OF THE OXIDATIVE REDUCTIVE ENZYMES UNDER STUDY IN METABOLIC PROCESSES OF INFECTED CELLS PROVIDING ENERGY FOR BIOSYNTHESIS OF VACCINIA VIRUS. FACILITY: INSTITUT VIRUSOLOGII IMENI D. I. IVANOVSKOGO AMN SSSR, MOSKVA.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE CYTOCHEMISTRY OF HERPETIC INFECTION OF FIBROBLAST CULTURE OF
HUMAN EMBRYO -U-

AUTHOR--(03)-BIKBULATOV, R.M., MALINOVSKAYA, V.V., VANAG, K.A.

COUNTRY OF INFO--USSR

SOURCE--BYULETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,
NR 6, PP 110-113

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EMBRYOLOGY, HUMAN PHYSIOLOGY, FETUS, DNA, RNA, HERPETIC VIRUS,
GLYCOGEN, CELL PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0574

STEP NO--UR/0219/70/049/006/0110/0113

CIRC ACCESSION NO--AP0131197

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0131197

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CYTOCHEMICAL STUDY OF HERPETIC INFECTION OF A CELLULAR CULTURE OF HUMAN EMBRYO FIBROBLASTS HAS SHOWN AN INTENSIFIED DNA ACTIVITY IN THE NUCLEI OF INFECTED CELLS, AN INCREASED QUANTITY OF RNA IN THE NUCLEI AT EARLY STAGES OF THE INFECTION AND A DECREASED RNA ACTIVITY IN THE CYTOPLASM IN THE RESIDUAL PHASE. THE INFECTION WAS ACCCOMPANIED BY A REDUCED QUANTITY OF GLYCOCEN IN THE CYTOPLASM OF CELLS AND THEIR PROGRESSIVE FATTY INFILTRATION.

FACILITY: D. I. IVANOVSKY INSTITUTE OF VIRULOGY OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

1/2 036

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--AFFECTION OF THE FOLLICULAR APPARATUS OF THE SKIN IN WORKERS
OCCUPIED IN PRODUCTION OF BUTYL ETHER OF 2,4,5,TRICHLORPHENOXY ACETIC
AUTHOR--(02)-TELEGINA, K.A., BIKBULATOVA, L.I.

B

COUNTRY OF INFO--USSR

SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 3, PP 35-39

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INDUSTRIAL HYGIENE, SKIN, TOXICOLOGY, UV IRRADIATION, BLOOD,
BLOOD VESSEL, LIVER FUNCTION, IRRITANT

CONTROL MAPPING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY RECL/FRAME--1986/0690

STEP NO--UR/0206/70/000/003/0035/0039

CIRC ACCESSION NO--AP0102674

UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102574

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OBSERVATIONS AND EXAMINATIONS REVEALED AFFECTIONS OF THE FOLLICULAR APPARATUS OF THE SKIN AND IRRITATIONS OF THE NASOPHARYNGEAL MUCOSA IN PERSONS HAVING PROLONGED CONTACTS WITH CHEMICAL SUBSTANCES USED IN PRODUCTION OF BUTYL ETHER OF 2,4,5,TRICHLORPHENOXY ACETIC ACID. AT THE SAME TIME SLIGHT DEVIATIONS FROM THE NORMAL WERE FOUND IN SOME INDICES OF THE BLOOD, LIVER FUNCTION, BLOOD VESSELS, PERMEABILITY OF THE HORNY LAYER AND SENSITIVITY OF THE SKIN TO ULTRAVIOLET IRRADIATION. DISCONTINUANCE OF THE CONTACT WITH CHEMICAL IRRITANTS AND PROLONGED TREATMENT RESULT IN REGRESSIONS OF PATHOLOGICAL CHANGES IN THE SKIN AND NORMALIZATION OF DISORDERS IN THE VITAL FUNCTIONS.

UNCLASSIFIED

USSR

UDC 534

KOZHEVNIKOV, YU. V., BIKCHANTAEV, M. KH.

"Boundary Damping of Oscillations"

Tr. Kazan. aviat. in-ta (Works of the Kazan' Aircraft Institute), 1971, vyp. 130, pp 20-27 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11A149)

Translation: A study was made of the problem of damping the oscillatory process of a distributed system described by the wave equation by operating on the system boundaries. The control functions are found from the condition of the minimum of the energy functional of the system with limited variation of the energy of displacement of the ends. The problem of finding the law of motion of the ends is reduced to the boundary problem for a system of differential-difference equations. A method of solving the obtained problem is given.

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1/2 007 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--2,ISOPROPYLNAPHTHALENE -U-

AUTHOR--(05)--TOKARSKAYA, I.I., BIKCHURINA, L.KH., SHMELEV, A.S., AKHMETOVA,
S.Z., ABRAMOVICH, Z.I.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,583
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

B

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NAPHTHALENE, ALKYLATION, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1586

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0135227

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AA0135227
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 2,ISOPROPYLNAPHTHALENE IS PREPD.
BY ALKYLATING NAPHTHALENE WITH A FRACTION OF POLYALKYL BENZENES (1:9-10
RATIO) IN THE PRESENCE OF ALCL SUB3.

UNCLASSIFIED

USSR

BIKELENE, V.

"Limit Theorems for a Simple Random Sample of a Finite Set"

Lit. mat. sb. [Lithuanian Mathematics Collection], 1973, 13, No 1, pp 47-54 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, abstract No 8 V29 by the author)

Translation: Let $U_v = \{y_{v1}, y_{v2}, \dots, y_{vN_v}\}$, $v=1, 2, \dots$, be a sequence of random general sets with elements y_{vi} , $i=1, 2, \dots, N_v$, which are natural numbers. The random sample $\{y_{v1}, y_{v2}, \dots, y_{vn_v}\}$ without regression from the set U_v , is studied. This work produces an estimate of the rate of convergence of the distribution of the sum

$$\xi_v = \sum_{i \in S_{n_v}} y_{vi}, \quad S_{n_v} = \{i_1, i_2, \dots, i_{n_v}\}$$

to the Poisson distribution.

1/1

- 4 -

USSR

BIKELIS, A. (Vilnius State University)

"Central Limit Theorem in R^k . I"

Vilnius, Litovskiy Matematicheskiy Sbornik, January-March 1971, pp 27-57

Abstract: Let G be the class of all functions $g(x)$ defined on the real line and satisfying the following conditions:

- 1) $g(x)$ is non-negative, even, non-decreasing on $[0, \infty)$ and $\lim_{x \rightarrow \infty} g(x) = \infty$;
- 2) $\frac{x}{g(x)}$ is defined for all x and is non-decreasing on $[0, \infty)$.

Let $\xi_j = (\xi_{1j}, \xi_{2j}, \dots, \xi_{kj})$, $j = 1, \dots, n$, be a sequence of independent random vectors in R^k , with the distributions $F_j(x)$, $j = 1, 2, \dots, n$.

Thus in this paper is proved the following

Theorem. Let ξ_j , $j = 1, 2, \dots, n$, possess finite moments $M[\xi_{ij}^2 g(\xi_{ij})]$, $i = 1, 2, \dots, k$, $j = 1, \dots, n$, and let the covariance matrix W of the

USSR

BIKELIS, A., Litovskiy Matematicheskiy Sbornik, January-March 1971, pp 27-57

distribution function

$$F(x) = \frac{1}{n} \sum_{j=1}^n F_j(x + M_{\xi_j}^*)$$

of the random vector θ be non-singular. Then uniformly for all convex Borel sets A

$$\left| P\left\{ \frac{1}{\sqrt{n}} \sum_{j=1}^n (\xi_j - M\xi_j) \in A \right\} - \Phi_{\theta, W}(A) \right| \leq \frac{C(k)}{g(\sqrt{n})} M[(\theta W^{-1} \theta^*) g(\sqrt{\theta W^{-1} \theta})],$$

where $\theta W^{-1} \theta^*$ is the quadratic form.

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- 20 -

USSR

UDC: 621.373.029.7

BAZAROV, Ye. N., BIKETOV, V. D., GUBIN, V. P.

"Short-Term Instability of a Standard Based on a Rubidium Maser With Optical Pumping"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 4, Apr 72, pp 887-889

Abstract: An investigation is made of the short-term instability of a frequency standard with quartz-crystal AFC circuit using a maser on Rb⁸⁷ vapor with optical pumping. Measurement errors are analyzed. It was found that instability in the region $\tau < 1$ s is determined by external additive receiver noise. Instability in the region $\tau > 1$ s is determined by temperature fluctuations in the dimensions of the cavity. Temperature compensation by a buffer gas should be used to improve stability at $\tau > 100$ s. The authors thank L. Z. Pososhenko for designing the electronic circuits of the frequency standard, and Ya. A. Yukhvidin for his interest in the work.

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Lasers/Masers

USSR

UDC 621.373.029.7.001.5

BAZAROV, YE.N., BIKETOV, V.D., GUBIN, V.P., YUKHVIDIN, YA.A.

"Buffer Gas Influence On A Laser Operating On Rb⁸⁷ Vapors With Optical Pumping"

Radiotekhnika i elektronika, Vol XVII, No 3, Mar 1972, pp 556-564

Abstract: A theoretical and experimental study is made of the operation of a rubidium laser in the process of generation, with filling of its resonator with nitrogen and mixtures of nitrogen-argon. The experiments were conducted on a model of a rubidium laser, the construction of which is analogous to that described by Ye. N. Bazarov and V.P. Gubin (Radiotekhnika i elektronika, 1969, 14, 6, 1043). However, in a given case, the magnitude of the coupling of the rubidium laser with the load can be selected within certain limits with the aid of a matching plate in the output waveguide. The resonator of the model was connected to a vacuum-pumping assembly which made it possible to evacuate it to a pressure of 10^{-5} torr and to fill it with various gases. It is shown that with a concentration of rubidium atoms considerably exceeding the threshold, the limiting short-term stability of the rubidium laser does not depend on the parameters of the buffer mixture. The theoretical and experimental study conducted shows the possibility of creating a rubidium laser with a small temperature coefficient of the frequency, a large power of generation, and a high short-term stability. The authors thank B.M. Glebov for help in preparing the experiment and V.F. Zolin and E.I. Alekseyev for discussion of results. 7 fig.12 ref. Received, 8 Dec 70.

USSR

UDC: 621.762.2:669.1'24(088.8)

(5)

PUTINTSEV, B. N., GRATSIANOV, Yu. A., KOZLOV, A. G., MINCHER, A. N.,
LEVINZON, V. Kh., STERLIN, R. G., BAKANOVA, T. P., BIKEZIN, K. P., MIKHEYEV,
V. V.

"Method of Production of Iron-Nickel Alloy Powders"

USSR Author's Certificate Number 343771, Filed 7/04/71, Published 11/08/72
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract
No 8G394P).

Translation: A method is suggested for embrittlement of Fe-Ni alloys, designed for the production of powders by mechanical grinding. Fe-Ni alloys are embrittled by introduction of S to the initial melt. In order to increase the dispersion and technological properties of the powders, 0.03-0.07 wt % oxygen is also introduced to the initial melt, with a ratio of oxygen to S of 2.0-7.0.

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UDC 669.15'26-194

BIKEZIN, K. P., LYUBINSKAYA, M. A., TOPILIN, V. V., ZUBKO, A. M., and
DZUGUTOV, M. Ya.

"Developing Production Techniques and Determining the Characteristics of
Low-Carbon Kh28-VI Steel"

Moscow, Stal', No 2, Feb 71, pp 162-166

Abstract: This steel differs from the known Kh28 type by its especially low carbon content. While steels of high chromium content are known to be highly brittle at room temperature and are consequently limited in their application in objects operating under shock conditions, the low carbon content of Kh-28VI steel provides a shock strength of more than 20 kg/cm² with high resistance to corrosion. Its coefficient of thermal expansion is close to that of glass, so that it can be joined to that substance. Three techniques for obtaining iron with a carbon content of less than 0.01% had to be tested before the steel could be produced. Details of the process finally decided upon are given together with the steel's chemical composition, and the results of heat deformation tests are presented. There is a table of the steel's mechanical qualities for different 1/2

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BIKEZIN, K. P., *Stal'*, No 2, Feb 71, pp 162-166

variations of its carbon content and treatment. The metal is manufactured in a vacuum induction furnace using high-purity iron and electrolytic chromium.

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Acc. Nr.:

AP0029821

Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 102-105

ON THE THERAPEUTIC EFFICIENCY OF ELEUTHEROCOCCUS
Lyubomudrov, V.Ye.; Basamygina, L.Ya.; Bikezina, V.G.;
Mukhina, M.S.; Mikhaylova, T.I.; Osadchuk, V.S.;
Shidlovskiy, Ye.F.; Bondarenko, G.A.; Demkovich, O.A. (Donetsk)

Eleutherococcus improves abnormal pulmonary ventilation, favours normalization of the arterial pressure, positively influences cardiac rhythm and His bundle conduction. It proved rather efficient in the treatment of patients with initial stages of vibration disease. It is promising in the treatment of chronic lead intoxication. The preparation favours more rapid acclimatization of pneumoconiosis involved miners.

It is concluded that eleutherococcus may be recommended for the complex treatment of patients with some professional diseases and more rapid acclimatization of patients to sanatorium conditions.

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UDC 546.33:547.468.32.024'212

BIKIMAN, B. I., URINOVICH, E. M., KIREEVA, A. YU., SHUGAL, N. F.,
DYATLOVA, N. M. (All-Union Scientific Research Institute of Chemical Reagents and Especially Pure Chemical Substances (IREA))

"Study of Hydroxyethylindenediphosphonic Acid and Its Sodium Salt"

Moscow, Zhurnal Neorganicheskoi Khimii, vol 18, No 9, Sept 1973,
pp 2406-2409

Abstract: The trisodium salt of hydroxyethylindenediphosphonic acid was prepared by adding NaOH to an aqueous solution of the free acid (synthesis of acid is referenced) in distilled water, cooled by ice. Chemical analysis of the salt verified its elemental composition, and IR absorption spectra confirmed the structure of the free acid and the salt. Potentiometric titration showed two protons in the salt and five in the acid. The acid loses its water of crystallization (0.5 H₂O) in one step at 76°C, while the salt loses 2 molecules at 116°C and the other 2.5 at 190°C. In aqueous solution the salt has a neutral pH and is recommended as a complexing agent at this pH.

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UDC 576.858.095.5

DREYZIN, R. S., BIKHNovich, E. M., BOROVKOVA, N. M., and PONOMAREVA, T. I.,
Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences
USSR

"Characteristics of Replication of Five Serotypes of Rhinoviruses and Their
Antigenic Relationships"

Moscow, Voprosy Virusologii, No 5, 1971, pp 565-569

Abstract: The cycles of replication of rhinovirus strains B632, 1059, 33342, 56822, and Feb in a culture of HeLa cells last about 6 to 7 hours. The maximum titers of infectious virus are found after 9 to 12 hours. Infectious virus appears in the culture fluid of all strains 2 to 3 hours later than in the cells. The cytopathic effect is not manifested in the infected cells until 1 or 2 hours after the appearance of the virus in the cell phase, i.e., after 8 hours of cultivation. Antigens of strains 1059, 56822, and B632 can be found in a subculture of human embryo fibroblasts after 4 to 6 hours of cultivation and those of the Feb strain after 10 to 12 hours by using the indirect immunofluorescence method. In all stages of infection the antigens are concentrated in the cytoplasm. Analysis of antigenic relationships using the indirect immunofluorescence method shows a lack of common antigens in 1/2

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DREYZIN, R. S., et al., Voprosy Virusologii, No 5, 1971, pp 565-569
strains 1059, 56822, B632, and Feb as well as strict type-specificity of
immune sera.

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UDC 621.385.6

SHUL'GA, V.G., BONDARENKO, B.N., BIKHSHTEYN, V.I.

"Depression Factor Of Heterovelocity Electron Flows"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific-Technical Collection), 1970, Issue 14, pp 19-23
(from RZh-Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4A25)

Translation: A computation is presented of the depression factor [koeffitsient depressii] for heterovelocity electron beams. In the case under consideration the depression factor forms a matrix. The problem was solved for an arbitrary relative spatial distribution of coaxial beams. The relationships obtained are illustrated by numerical computations which are presented in the form of charts. 2 ref. Summary.

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SIMONOV, V. V., ANISHCHENKO, A. F., and BIKKULOV, A. Z.

"Inertness of Certain Chlorine-containing C_5 -cyclic Ketones in the Reaction with Cyclopentadiene"

Dokl. Neftikhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. O-va im. D. I. Mendeleyeva [Works of Petrochemical Section, Bashkir Republic Administration of All-Union Chemical Society imeni D. I. Mendeleyev], Vol 6, 1971, pp 309-312. (Translated from Referativnyy Zhurnal Khimiya, No 5, Moscow, 1972, Abstract No 5N607 by T. K. Yudovskaya)

Translation: The chlorinated cyclopent-2-en-1-ones (I) [2,3,4,4,5,5-Cl₆I (a), 2,3,4,4,5-Cl₅-I (b), 2,3,4,4-Cl₄-5-(CCl₂)-I (c), 2,3,4-Cl₃-5-(CCl₂)-I (d)] and cyclopent-2-ene-1,4-diones (II) [for example, 2,3,5,5-Cl₄-II (a), 2,3,5-Cl₃-II (b), 2,3-Cl₂-II (c)], are inert in the reaction with cyclopentadiene when it is performed in boiling C₆H₆, PhMe and xylene at atmospheric pressure, while Ia, IIa, Ic, and IIc do not react even at high pressures and temperatures of 180-200°. It is assumed that this inertness results from spatial effects.

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SIMONOV, V. V., ANISHCHENKO, A. F., BIKKULOV, A. Z.

"Interaction of Certain C₅-Cyclical Chlorocarbons with Cyclopentadiene"

Dokl Neftekhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. O-va Im., D. I. Mendeleyeva, [Works of Petrochemical Section of Bashkir Republic Administration of All-Union Chemical Society imeni D. I. Mendeleyev], Vol 6, 1971, pp 313-316. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4H584, by S. Ye Lyubarskaya).

Translation: It was established in a study of the reaction of cyclopentadiene (CPD) with three dienophils -- hexachlorofulvene (I), octachlorocyclopentene (II) and perchloromethylene- Δ^3 -cyclopentene (III) that II and III under the conditions studied do not react with CPD. I, when boiled in C₆H₆ (10 hr) forms an adduct (IV), m. p. 122-3° (ethanol). Two structures are assumed for IV, based on reaction I as a dienophil. The possibility of reaction I as a diene like the behavior of hexachlorocyclopentadiene in the reaction with CPD is improbable, since I forms no adduct with maleic anhydride under various conditions. The structure of 4 is not established.

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UDC 8.74

BIKMUKHAMEDOV, A. Z., MAKAROVA, I. P.

"A problem of Optimal Data Allocation in a Large Memory"

V sb. Metody i modeli upr. Vyp. 1 (Control Methods and Models. Vyp. 1--collection of works), Riga, 1971, pp 62-67 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V447)

Translation: A study was made of the problem of optimal allocation of data on the magnetic tapes or magnetic discs for the criteria of minimum mean time and access time (the access statistics are considered constant) in the model of a memory comprising a magnetic disc module or a magnetic tape module. In all in memory there are n files of different length. The information search is realized in two directions, and reading, in one direction. For magnetic tapes the reading direction remains coincident with the numbering direction of the locations of the information files.

For one model studies were made of two basic problems: 1) find the arrangement of the memory files minimizing the mean access time in memory; 2) find the arrangement of the memory files minimizing the maximum weighted access time to memory.

Problems 1 and 2 belong to the class of extremal combinatory problems,
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BIKMUKHAMEDOV, A. Z., et al., Metody i modeli upr. Vyp. 1, Riga, 1971, pp 62-67

the approximate solution of which is found on the basis of the exact solution for a special case.

It is stated that the optimal solution of problems 1 and 2 under the condition that the probabilities of access to the information files are equipped

with weighted proportional coefficients $v / \sum_{\gamma=1}^n v$ where v is the length of

the γ -th information file, $\gamma = 1, 2, \dots, n$ is the exact solution for the special case where the references to the information file are independent, and the sizes of the information files are equal.

In the case of determining the information distribution in various search memory devices, for example, on magnetic tapes and magnetic discs, the statement remains in force after selecting the volume of information for each type of memory.

The problem of optimal allocation arises not only for optimization of the arrangement of the information in the digital computer memory. Other interpretations of the presented mathematical model are also possible.

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